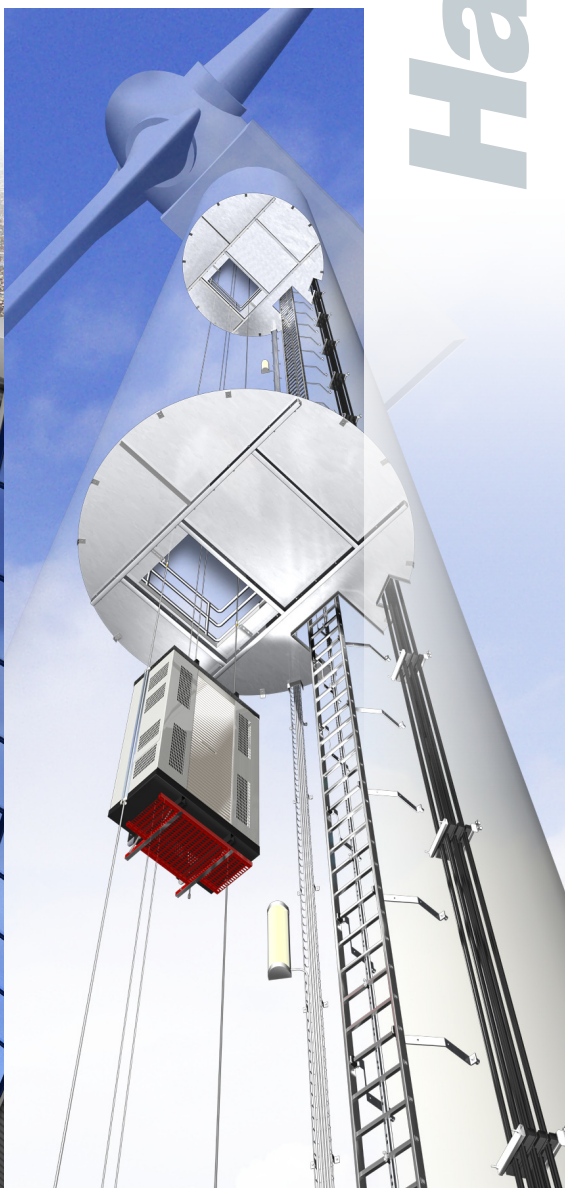
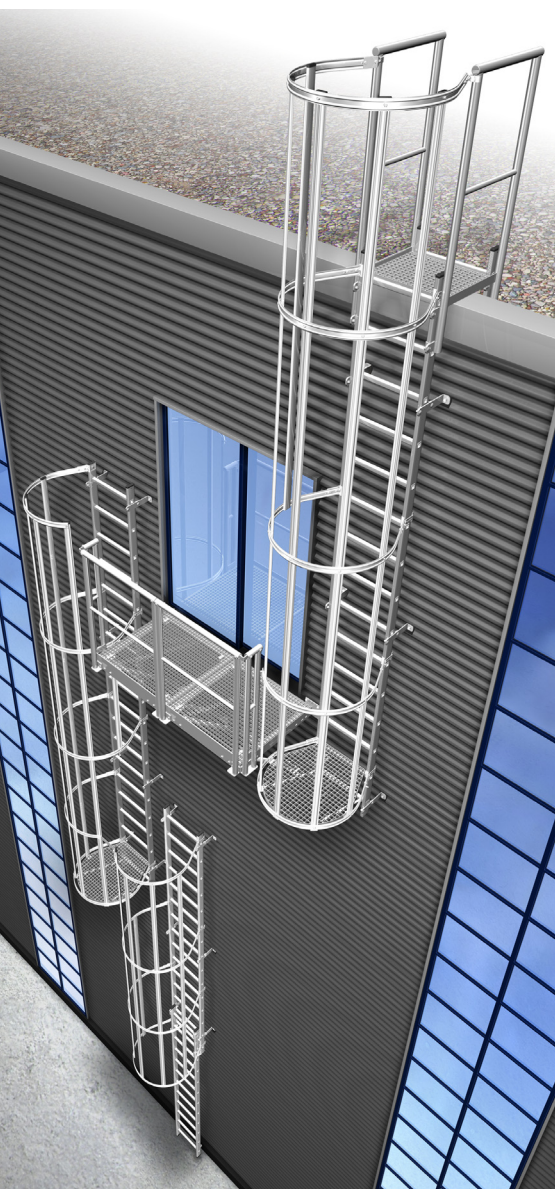


Installation and Operating Manual for fixed ladders in the standard version

DIN 18799-1, DIN 14094-1, DIN EN ISO 14122-4



Hailo

Introduction

Dear Customer,

with the purchase of the aluminium fixed ladder system you have chosen a quality product from Hailo.

We would like to thank you for your trust in our product.

This installation and operating manual describes the installation, use and maintenance and inspection of the aluminium fixed ladder system with standard wall brackets.

Please read this manual completely and observe all safety precautions before you begin the installation work and start using the fixed ladder.

Damage caused by failure to observe these instructions and safety precautions will invalidate the warranty. We are not liable for the resulting consequential damage.

The aluminium fixed ladder systems described in this installation and operating manual meet the standards DIN EN ISO 14122-4, DIN 18799-1 and DIN 14094-1.

The main components of the fixed ladder systems have been type-tested by the testing and certification body for structural facilities at DGUV Test, Niebuhrstraße 5, 53113 Bonn, Germany.

If you have any questions or suggestions regarding our aluminium fixed ladder system, please call us.

We will be at your full disposal.

Hailo-Werk, Rudolf Loh GmbH & Co. KG
PO Box 1262, 35708 Haiger, Germany



+49 (0) 2773 82-0



+49 (0) 2773 82-561

E-Mail: info@hailo-professional.de
www.hailo-professional.de

IMPORTANT TELEPHONE NUMBERS:

We recommend each user to store the following telephone numbers in their mobile phone.

Emergency:

.....

Fire department:

.....

Operator of the system:

.....

Hailo service number:

.....

Other important telephone numbers:

.....

.....

.....

.....

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1. Preliminary Notes

How to use the installation and operating manual



The installation and operating manual should be read carefully and taken into consideration before installing and before using the fixed ladder system.

The operator must ensure that the installation and operating manual is stored on site (or at a suitable location) where a ladder system is in use and that it is made available at any time for the the users.

Texts or drawings that are highlighted by symbols distinguish particularly important content and dangerous situations. Failure to follow these instructions can cause injury or even death.

Symbols used in the manual:



General warning



Risk of falling



General instruction



Take note of the documentation



Use personal protection equipment (PPE) against falling



Tip, additional note

General regulations



The workplace ordinance demands that an authorised and qualified person inspects the ladders (including accessories) regularly to make sure that they are in good condition.

The time intervals for the inspections are to be determined by the employer (operator) and depend on the operating conditions.



Operators have the responsibility to:

- ensure compliance with local, state and federal regulations
- adhere to the rules and standards (laws, regulations, guidelines, etc.) listed within the installation and operation manual to ensure safe handling
- ensure that the installation and operating manual is made available to the installation personnel before an installation job is carried out and that the instructions – notes, cautions and safety regulations – are followed in all their aspects
- consider that ladders in accordance with DIN EN ISO 14122-4, DIN 18799-1, DIN 14094-1 each have different requirements regarding design and installation.

Checklists may be obtained free of charge from Hailo.

2. Safety Notes



Failure to observe the safety instructions on page 6 and 7 will invalidate the manufacturer's warranty!



If using a ladder with a back-guard then an additional fall arrest system according to DIN EN 353-1 cannot be used.

Reason: a rescue operation is not possible due to space reasons.



Instructions for installing and

Fall Protection:

According to DIN 18799-1 and DIN 14094-1 fall protection is required for heights $\geq 5\text{m}$.

According to DIN EN ISO 14122-4 fall protection is required for heights $\geq 3\text{m}$.

According to DIN 14094-1 „fire-escape ladders“, guardrails in accordance with EN 353-1 are not to be used.

Only a back-guard is permitted.

According to DIN 18799-1 and DIN EN ISO 14122-4 for heights above 10m and single-section ladders only fall protection according to EN 353-1 is allowed.

The safety notes and regulations must be followed to ensure an error-free installation and use of the ladder.

This installation and operating manual should be read by anyone who installs and uses the ladder.

Furthermore, the applicable on-site regulations on accident prevention must be followed.

using the fixed ladder

- Before using the ladder make sure that there is enough free space within the workplace below the user so that it would not be possible to fall on an obstacle in the case of falling off the ladder.
- Before using the ladder it must be inspected visually.
- The user must be physically and mentally capable of climbing the ladder.
If the user needs to take medication, it is necessary to check the adverse effects that may have an influence or cause physical harm when using the system.
- Before starting work on the system the user of the ladder must consult with the operator regarding the initiation and implementation of emergency procedures.
- Also in order to be able to recognize potential hazardous points, the user should be aware of the specific local conditions in advance.
- When installing and using accessories for this system, the supplied instructions are to be followed carefully.
- The ladder is only to be used for its intended use and it must be in perfectly safe condition.
- The system or parts of the system are to be immediately withdrawn from use if any doubts arise regarding their safe condition.
This must be done by the manufacturer or another qualified person.
- It is not permitted to make modifications or enhancements to the equipment without the prior written approval of the manufacturer.
- Any necessary repairs must be carried out in accordance with the procedures that are specified by the manufacturer.
- During installation, maintenance or repair work make sure that no scaffolding, platforms or other things extend into the fall area and thus resulting in an additional fall hazard.

3. *Standards and Regulations*

BGV A1	General rules and regulations
BGV C22	Construction work
BGG 906	Principles for selecting, training and certifying the capability of experts on personal safety equipment to protect against falling
DIN 18799-1	Ladders for construction works
DIN 14094-1	Fire-escape ladders
DIN EN ISO 14122-4	Safety of machines –permanent means of access to machinery– „Fixed Ladders“

4. *Warranty and Liability*

The safety notes and regulations must be followed to ensure an error-free installation and use of the ladder.

This installation and operating manual should be read by anyone who installs and uses the ladder.

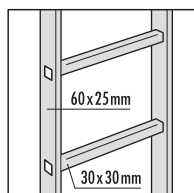
Furthermore, the applicable on-site regulations on accident prevention must be followed.

There is no liability for material or personal damage as a result from the following reasons:

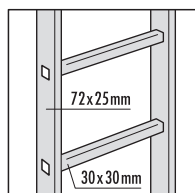
- Improper installation and use of the fixed ladder.
- Unintended use of the fixed ladder system.
- Use of the fixed ladder despite safety deficiencies.
- Ignorance or non-observance of this installation and operating manual.
- Unauthorized changes to the ladder system.
- Use of non-genuine spare parts.
- Insufficiently qualified or insufficiently instructed installation and operating personnel.

5. System Description

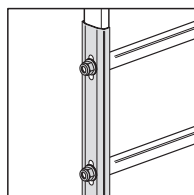
5.1 Overview of System Components



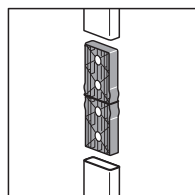
Aluminium ladder



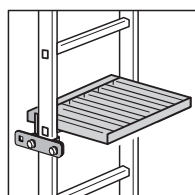
Aluminium ladder



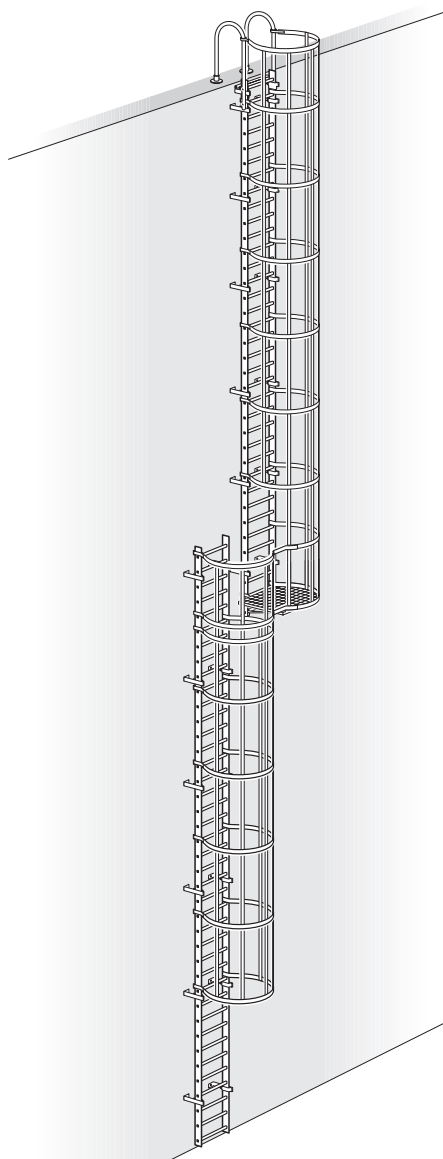
Ladder connector
(external connector)



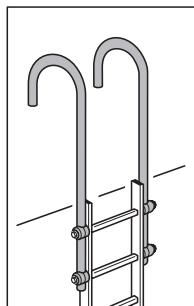
Ladder connector
(internal connector)



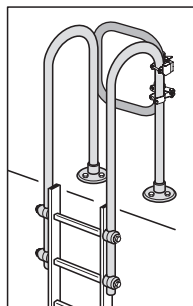
Rest platform



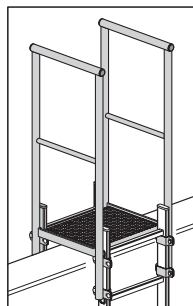
Further information regarding design and article numbers of the individual products can be found at:
www.hailo-professional.de



Exit rail
(various types)

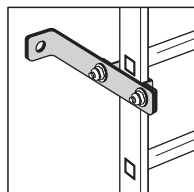


Long exit rail
(with a safety barrier)

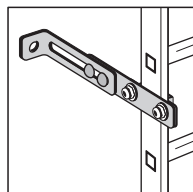


Crossing platform

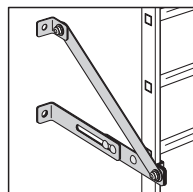
All illustrations are examples and may vary depending on the version used.



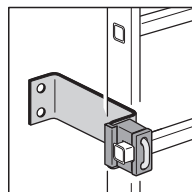
Standard wall bracket



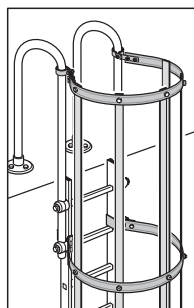
Adjustable wall bracket



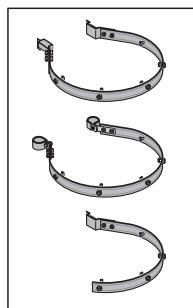
Special wall bracket
and suspension rod



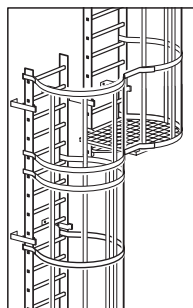
Wall bracket
with rung adapter



Back-guard system
(for ladder rail
72x25 mm)



Back-guard hoops



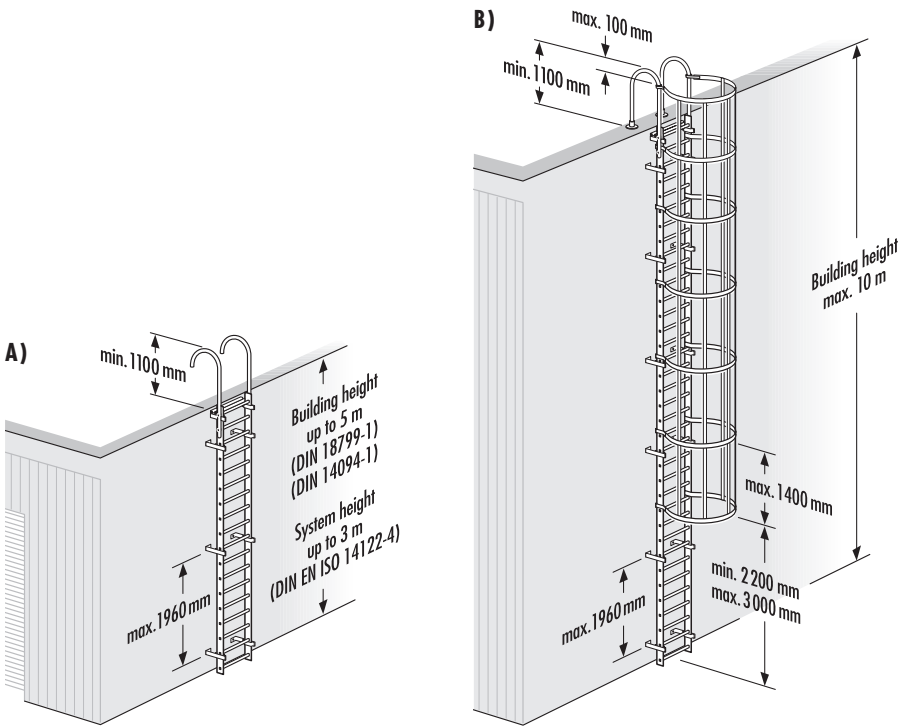
Rückenschutzsystem
(Systemkomponenten)

5. System Description

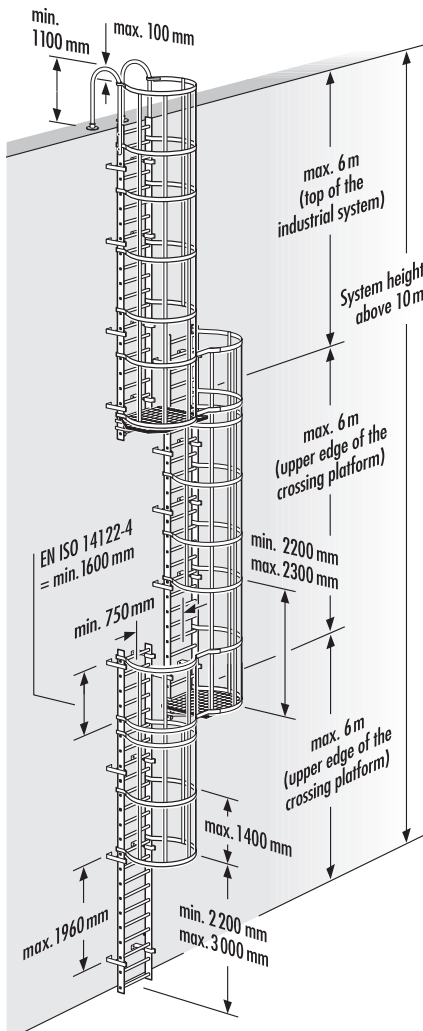
5.2 System Visualisation (Examples)

- According to DIN 18799-1 and DIN 14094-1 fall protection is required for heights $\geq 5\text{m}$.
- According to DIN EN ISO 14122-4 fall protection is required for heights $\geq 3\text{m}$.

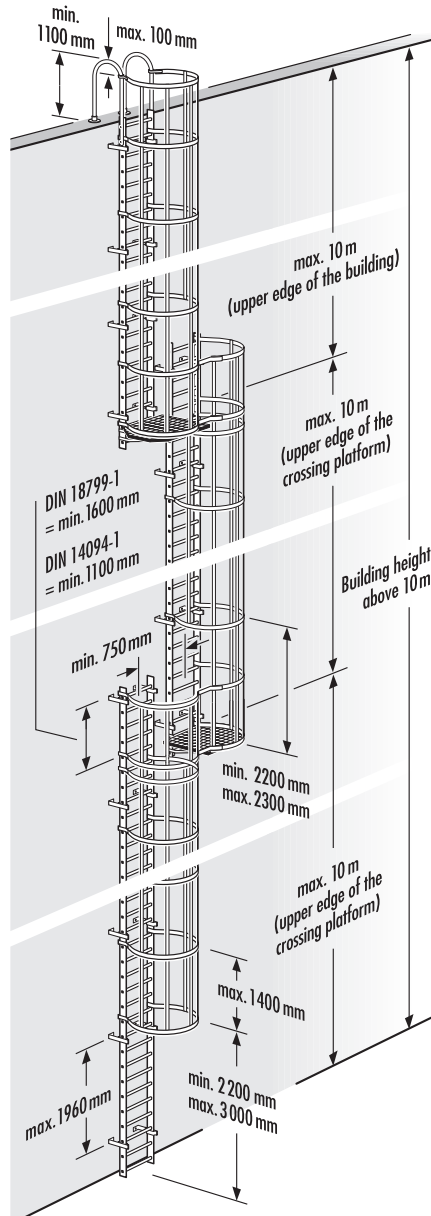
A) Single section ladder, basic unit without back-guard	DIN 18799-1, DIN 14094-1, DIN EN ISO 14122-4
B) Single section ladder, basic unit with back-guard	DIN 18799-1, DIN 14094-1, DIN EN ISO 14122-4
C) Multi-sectional ladder with back-guard	DIN EN ISO 14122-4
D) Multi-sectional ladder with back-guard	DIN 18799-1, DIN 14094-1



C)



D)



6. General Installation Instructions

6.1 Preliminary Notes

Preliminary note

- Before installation, make sure that the loads can be absorbed by the wall.
- If there is no information available on this (documents), then a static certificate of approval, that includes the required load capacity, is mandatory.
- If Hailo's special wall brackets are used, then they must be mounted according to the instructions in the relevant drawings, static or other specifications.

The loads stated on page 18 apply only to Hailo's standard wall bracket.

- If the necessary proof (for a safe load consumption) is not provided, then in case of damage the manufacturer cannot be made responsible for product liabilities. The liability is then passed on to the operator.

Installation personnel

- The personnel responsible for installing the ladder system must be capable and have the appropriate qualification and training.
- The installation personnel must not fasten themselves to the system that is being installed.
- They must use an approved attachment point on the wall according to EN 795 or another construction.

Installation

- Only use clean and undamaged system-parts.
- Damaged parts must be replaced with new parts.

Installation protocol

- The installation of the ladder system is to be fully documented by the technical supervisor of the installation company.



Caution: risk of falling!

During installation use an arrester system as specified in EN 363.

Installation of the fixed ladder (specified dimensions)

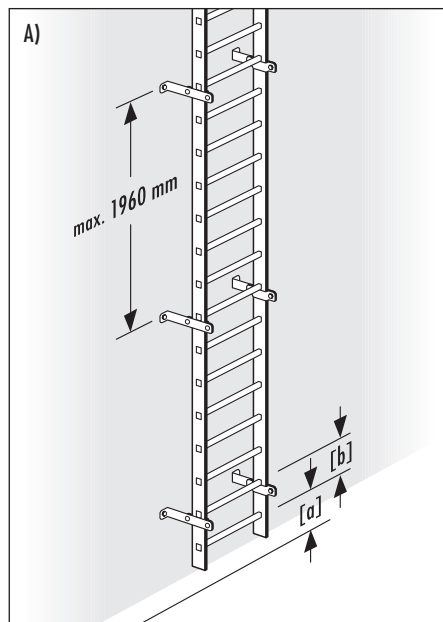


Figure A)

For the spacing dimension [a] the following principles apply:

DIN EN ISO 14122-4:

[a] = the distance between the entrance area and the first rung must not exceed the distance between two successive rungs

DIN 18799-1:

[a] = max. rung spacing [b] + 100 mm,
min. 1/2 rung spacing [b]

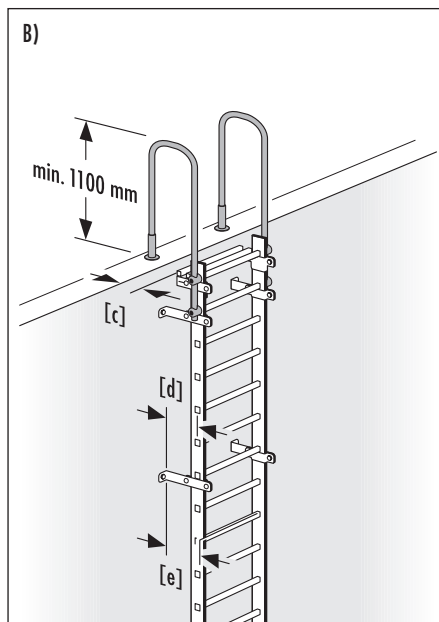


Figure B)

The top rung of the ladder and the rungs of an exit extension must be at the same height of the exit point.

[c] = the exit extension must not exceed the max. distance of 75 mm away from the wall (DIN EN ISO 14122-4 and DIN 18799-1).

[d] = the distance of the ladder (middle of the rung) to the mounting surface must be at least 150 mm (DIN 18799-1 and DIN 14094-1).

[e] = the distance of the ladder (front edge of the rung) to the mounting surface must be at least 200 mm (DIN EN ISO 14122-4).

6. General Installation Instructions

6.2 Installation Instructions

Instructions for mounting to the building:

- The attachment points and their connections (brackets, fasteners) must be able to absorb the loads.
- When sizing the ladder-fixture and attachment points a load of at least 3 kN per side rail and 6 kN per ladder is to be considered.
This load must be spread over the wall by using at least 2 attachment points per side rail, or 4 attachment points per ladder (see figure A).
This is the equivalent of 1.5 kN per attachment point.
- The attachment points must not exceed a vertical distance of max. 2000 mm.
(Logically = 1960 mm, with a rung spacing of 280 mm)
- The attachment points must always be in pairs, to the right and left of the ladder and arranged at the same level.
- The base surface of the structure must be sufficiently dimensioned and suitable for the previously mentioned loads
- Suitable base surfaces are:
steel constructions with threaded bushings (min. M12), see figure B, through-bolt connections or anchor dowel fixings to concrete buildings with a concrete quality of min. C 20/25, see figure C..

Mounting to concrete structures:

- For concrete structures only building authority approved dowels may be used.
- For non-defined surfaces, the fastening system must be consulted with the structural engineers.
- Requirements for the concrete:
the minimum quality of concrete is C 20/25.

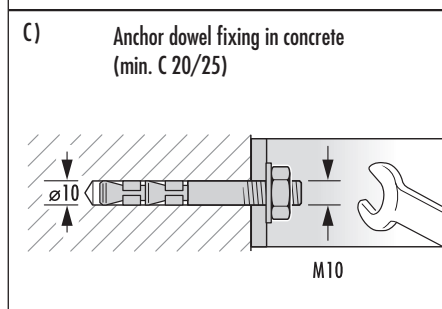
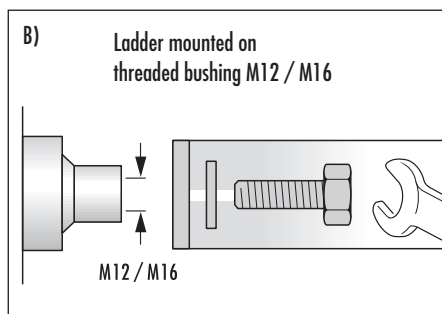
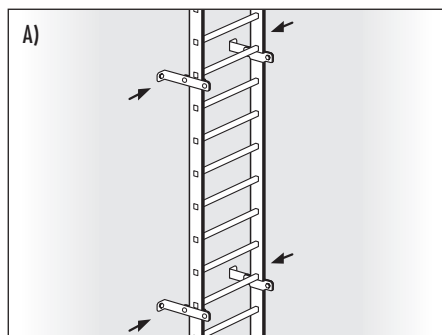
Mounting to masonry structures:

- For masonry structures only building authority approved dowels may be used.
- For non-defined surfaces, the fastening system must be consulted with the structural engineers.
- An anchor-bolt with counter-plate is also conceivable.
This is to be coordinated with the planner and must be certified.



Before mounting the ladder, make sure that the load transfer to the supporting structure can be guaranteed with a sufficient degree of security (to be coordinated with the planner)!

Pay attention to the installation instructions of the dowel manufacturer!



Tightening torques for the bolts

- Bolted connection with steel screws:

max. tightening torque M_A (Nm) with a total friction coefficient $\mu = 0.08$ ($\mu = 0.08$ is equivalent to a galvanized, uncoiled, dry surface)

Strength class 8.8: Strength class 10.9:

M 8 = 17.9 Nm	M 8 = 26.2 Nm
M 10 = 36.0 Nm	M 10 = 53.0 Nm
M 12 = 61.0 Nm	M 12 = 90.0 Nm
M 16 = 147.0 Nm	M 16 = 216.0 Nm
M 20 = 297.0 Nm	M 20 = 423.0 Nm

- Bolted connection with stainless steel bolts A2 + A4:

max. tightening torque M_A (Nm) with a total friction coefficient $\mu = 0.10$ ($\mu = 0.10$ is equivalent to an uncoiled, dry surface)

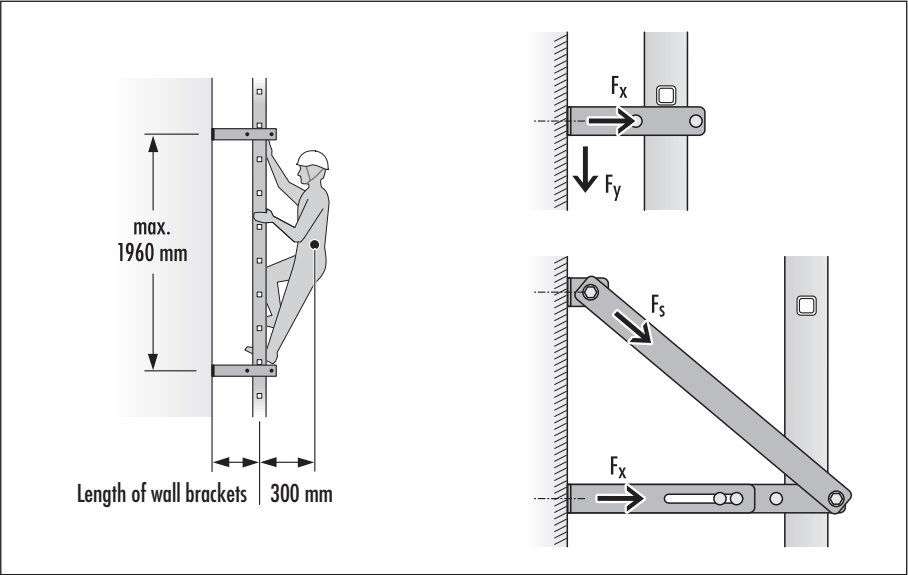
Strength class 70:

M 8 = 14.5 Nm
M 10 = 30.0 Nm
M 12 = 50.0 Nm
M 16 = 121.0 Nm
M 20 = 244.0 Nm

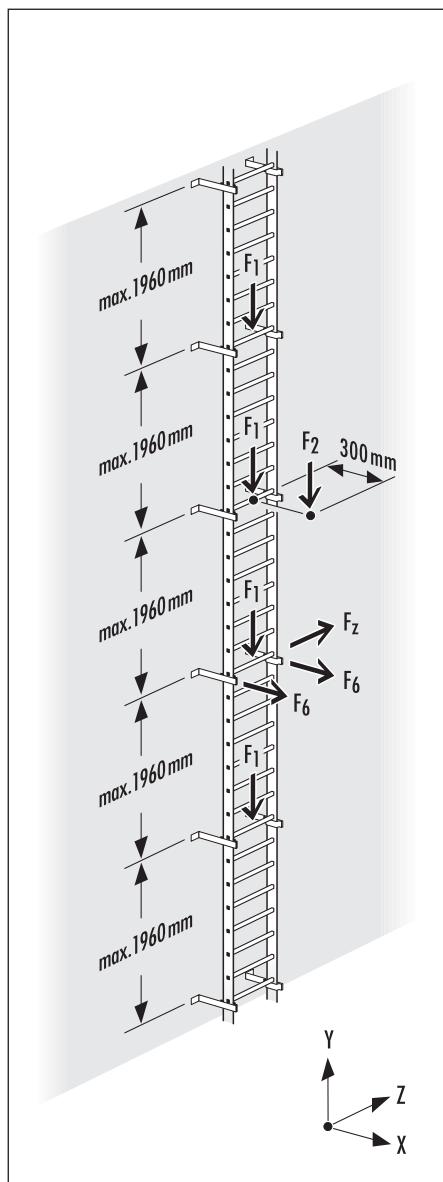
Strength class 70 is the equivalent to a cold-press manufacturing up to a nominal length of $8 \times d$ and at a yield strength of $R_p 0.2 = 90\%$.

6. General Installation Instructions

6.3 Load Scheme Standard Wall Brackets



Load information standard wall bracket Max. distance of the wall bracket = 1960 mm		Extraction forces F_x	Shear forces F_y	Extraction forces tension rod F_s
Standard wall bracket	165 mm	3,3 kN	0,6 kN	
Adjustable wall bracket	165 - 215 mm	4,1 kN	0,6 kN	
Adjustable wall bracket Distance of the tension rod =	165 - 300 mm 3920 mm	3,1 kN		1,9 kN
Adjustable wall bracket Distance of the tension rod =	300 - 430 mm 3920 mm	4,1 kN		1,9 kN



F_1 = Assumption: 4 people are on the ladder at the same time each with 1.5 kN man load.

F_2 = Eccentric acting man load

7. Mounting the Fixed Ladder

7.1 Installation Examples: Various Wall Bracket Versions

Consider the minimum exit depth:

DIN 18799-1, DIN 14094-1 = 150 mm
(distance from rung-middle to the mounting surface)

DIN EN ISO 14122-4 = 200 mm
(distance from the front edge of the rung
to the mounting surface)

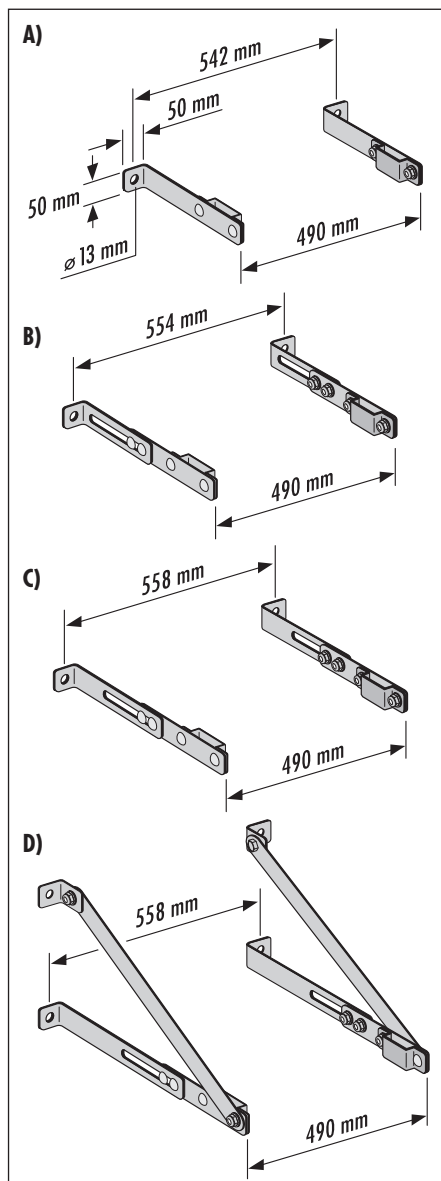
- A) Mounting the ladder with standard wall brackets and rail brackets.
- B) Mounting the ladder with adjustable wall brackets (165 - 215 mm) and rail brackets.
- C) Mounting the ladder with adjustable wall brackets (165 - 300 mm) and rail brackets.
- D) Mounting the ladder with a tie rod set for wall brackets (≥ 300 mm) and rail brackets.

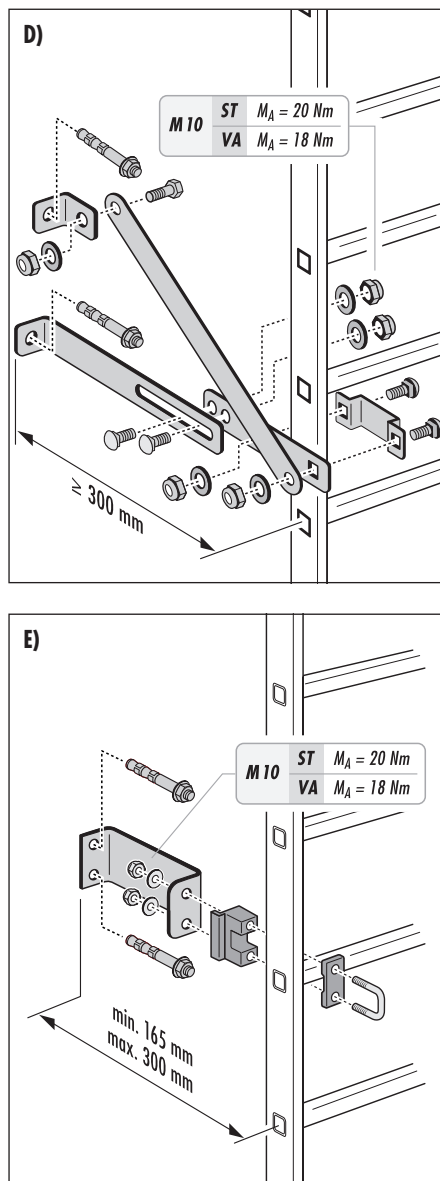
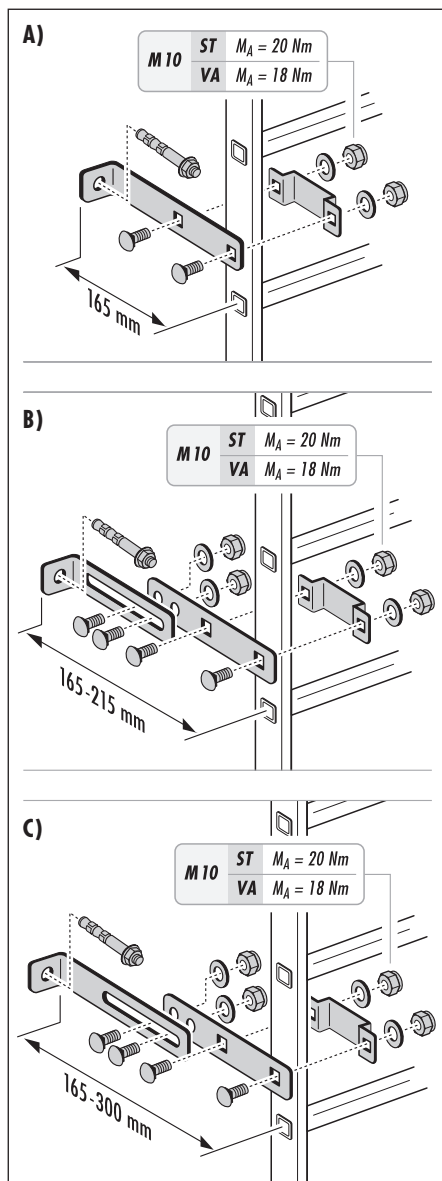
For distances between rung and building ≥ 300 mm additional tie rods (each on the right and left of the ladder) are required, that must be attached at a vertical distance of max. 3920 mm.

- E) Mounting the ladder by using a rung-adapter

The rung-adapter is a reliable and permanent prevention against contact corrosion between the ladder and other components.

All illustrations are examples
and may vary depending on
the version used.





7. Mounting the Fixed Ladder

7.2 Installation Examples: Ladder Connector Components

A) Internal rail connector

Material: plastic

Can be inserted into the rail profile 72 x 25 mm.

The depth of the connector is limited by a middle bar.

The rails are clamped accurately owing to the shape and surface of the rail connector.

The press fitting prevents the internal rail connector from falling out of the ladder rail.

B) Internal rail connector

Material: metal

Can be inserted into the rail profile 60 x 25 mm.

The depth of the connector is limited by the ladder rung.

The rails are clamped accurately owing to the shape and surface of the rail connector.

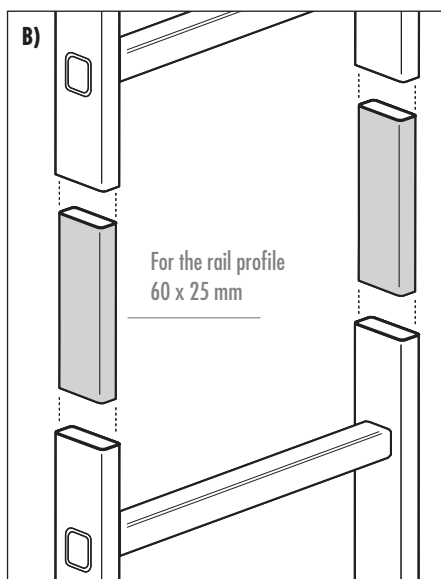
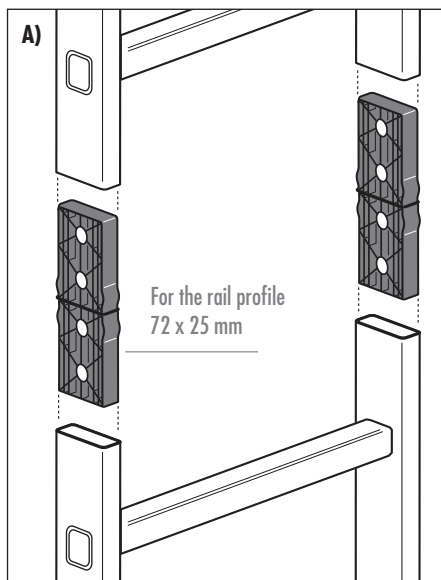
The press fitting prevents the internal rail connector from falling out of the ladder rail.

C) Internal rail connector (additional screw connection for installation in lattice towers)

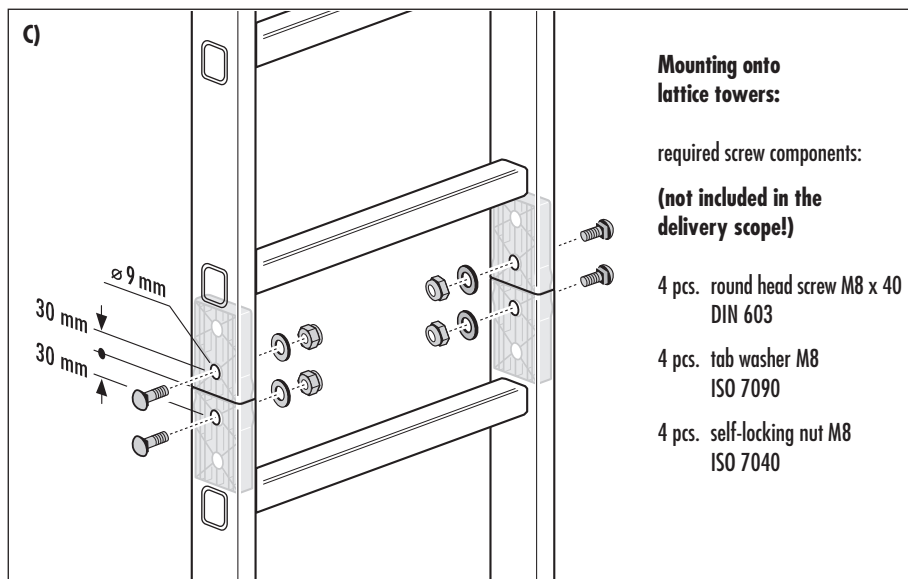
The plastic internal rail connectors may also be secured with a screw connection as follows:

mark the drill position and drill through the rail completely (\varnothing 9 mm).

Screw both parts to the rail (the inner area of the round head screw should be flush with the rail after tightening the lock nut).



Mounting onto lattice towers:
the internal rail connectors are screwed to the ladder.



Mounting onto wind energy plants:
a deviation of the rung spacing of ± 15 mm
(EN 50 308) is allowed. This difference may occur for
example in the flange area.

An internal rail connector is only intended for
guidance of the ladder rail, after installation it may
be visible over a length of about 30mm

7. Mounting the Fixed Ladder

7.2 Installation Examples: Ladder Connection Components, Rung Repair

C) Section - external rail connector:

Material: stainless steel or galvanized steel,
for ladder rail 72 x 25 mm and 60 x 25 mm.

With this external rail connector subsequent fitting or replacement fitting of ladder components is possible.

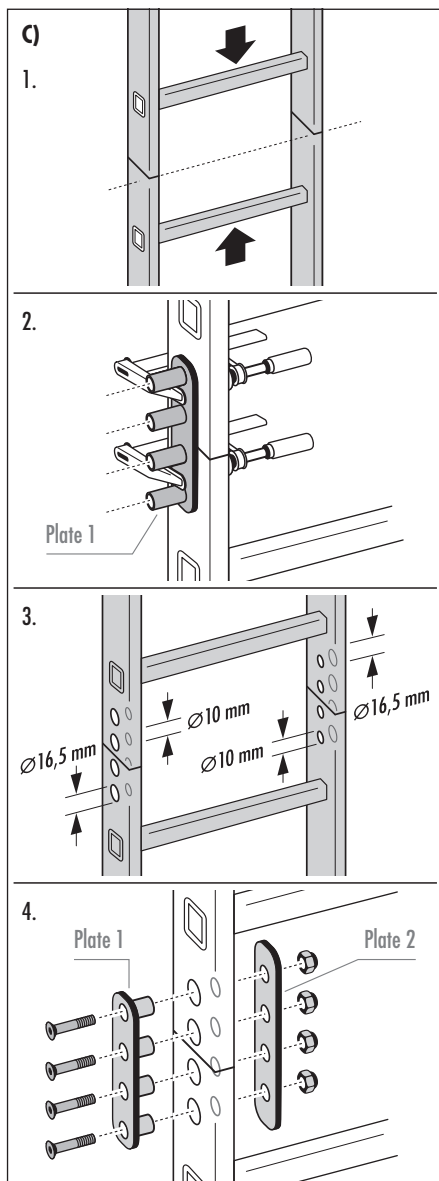
1. Fix the ladder ends to each other at the rail.
2. Plate 1 is used as a drill-template.
Position plate 1 vertically and horizontally centred on the ladder rungs as shown and secure with two small clamps.
Drill the ladder rail through the sleeves of the plate with a $\varnothing 10$ mm drill then remove the clamps and remove plate 1.
3. Drill the outer holes of the two ladder rails to $\varnothing 16,5$ mm.
4. Mount the external rail connector.
Place plate 1 into the outer holes and screw it together with plate 2.

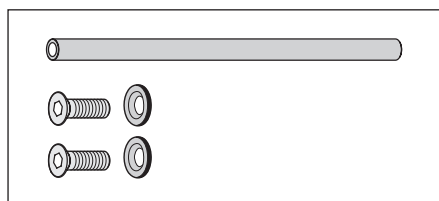
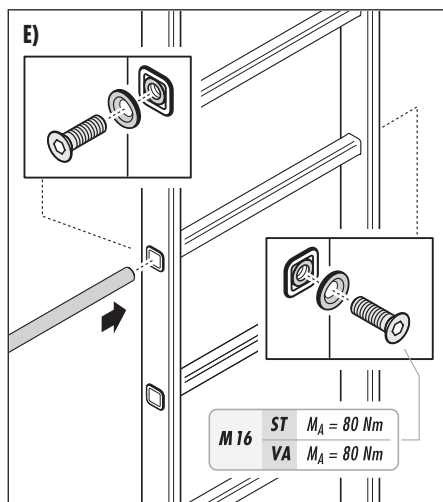
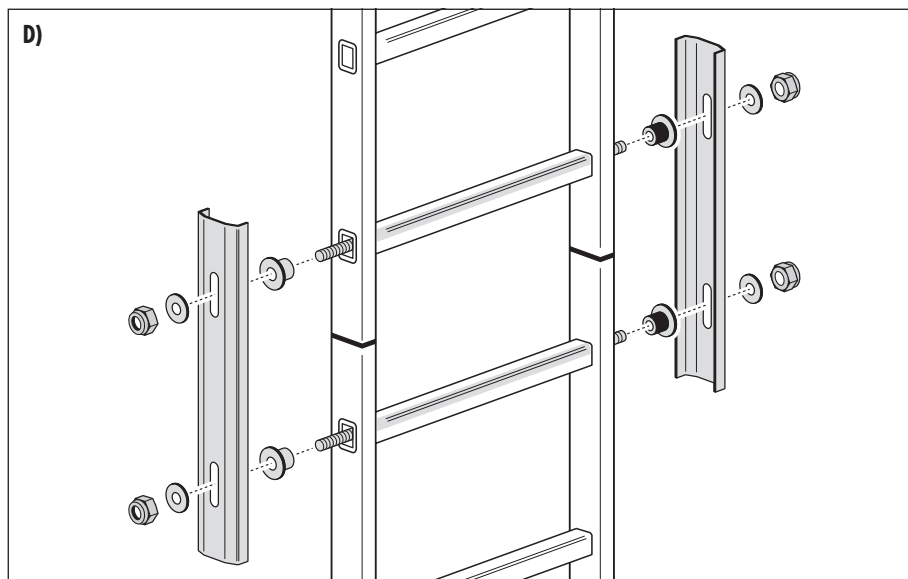
D) External rail connector

Material: stainless steel or galvanized steel,
for ladder rail 72 x 25 mm and 60 x 25 mm.

E) Rung repair kit

Material: galvanized steel,
to be used when repairing.
Put the insertion piece into the ladder rung and then screw the rails together.





7. Mounting the Fixed Ladder

7.3 Installation Examples: Various Entrance / Exit Elements

Entrance / exit elements are generally used at the top / at the beginning of the climbing route on buildings as a crossing element.

A) Exit rail bracket straight

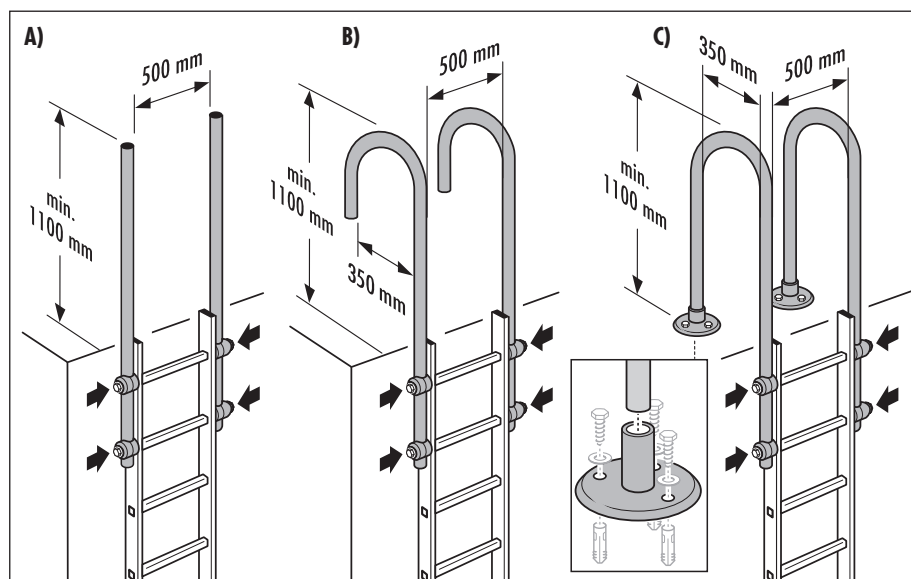
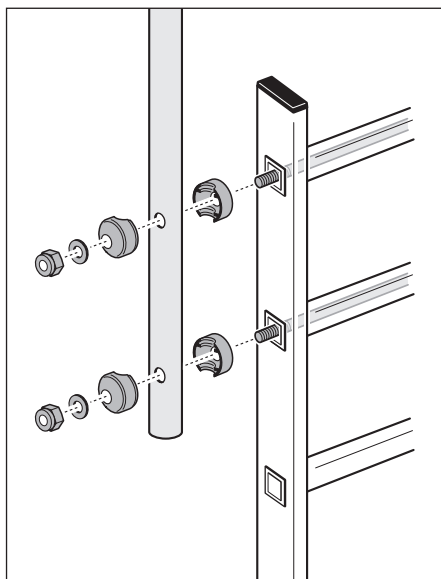
Material: natural aluminium / anodized, stainless steel or galvanized steel

B) Exit rail bracket short

Material: natural aluminium / anodized, stainless steel or galvanized steel

C) Exit rail bracket long

Material: natural aluminium / anodized, stainless steel or galvanized steel

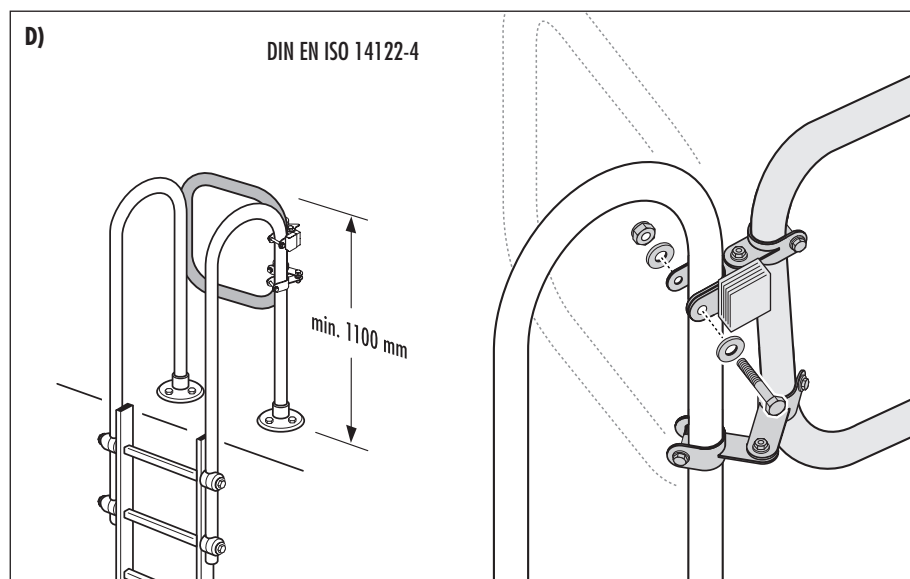
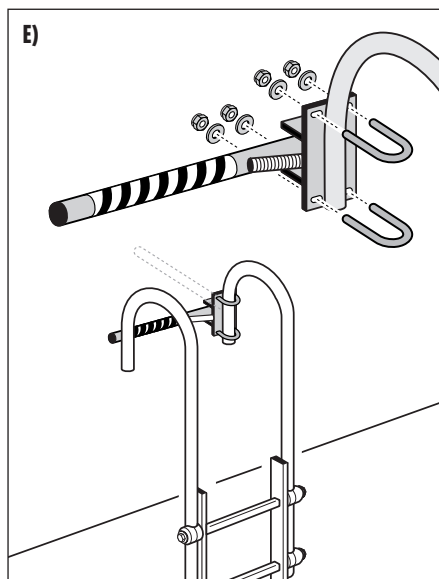


D) Exit rail bracket with safety barrier

Version including an additional security barrier with knee rail, 500 mm

E) Exit rail bracket with safety barrier

Version including an additional security barrier, 500 mm



7. Mounting the Fixed Ladder

7.3 Installation Examples: Various Entrance / Exit Elements

F) Exit

Exit extension:
(max. distance to the wall = 75 mm)

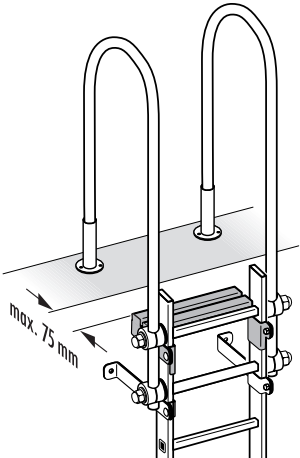
for ladders with an outer width of 490 mm,
material: stainless steel or galvanized steel

G) Crossing unit

Material: stainless steel or galvanized steel,
for ladder rails 40 x 20 mm and 72 x 25 mm,
depth = 500 mm, 750 mm, 1000 mm

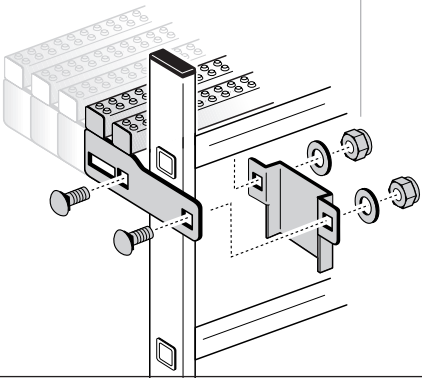
Different versions / sizes (customer specific)
are possible.

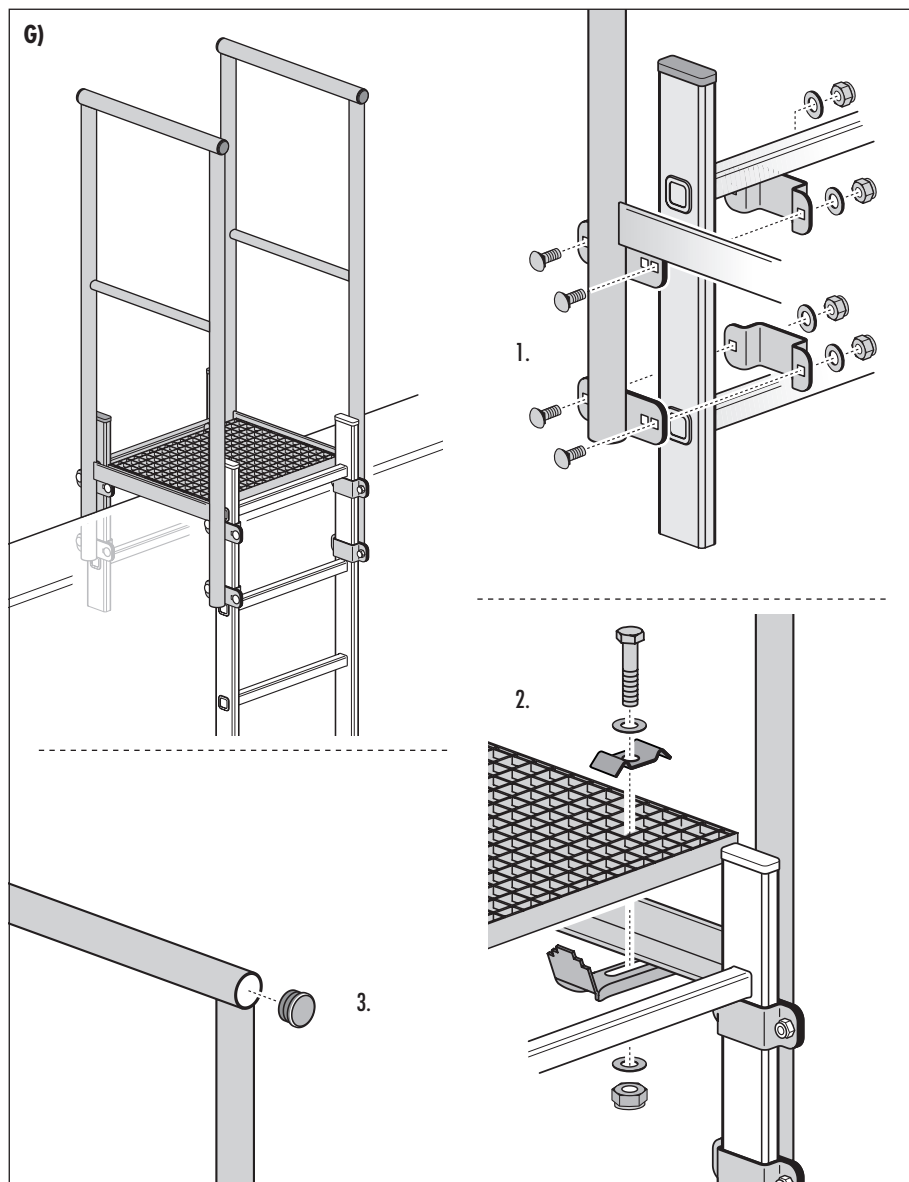
F)



Wall bracket	Exit
Spacing dimension	Amount of rungs
165 - 215 mm	2
215 - 290 mm	3
290 - 365 mm	4
365 - 440 mm	5

M 10	ST	$M_A = 20 \text{ Nm}$
	VA	$M_A = 18 \text{ Nm}$





7. Mounting the Fixed Ladder

7.4 Installation Examples: Back Protection - System Components

Fall Protection / back-guard on ladders is necessary for buildings from a height of 5000 mm (DIN 18799-1 and DIN 14094-1), and for machining facilities from a height of 3000 mm (EN ISO 14122-4).

Material: aluminium, stainless steel or galvanized steel

Assembly of the back-guard - basic elements

A) Assembly of the back-guard hoop

Fix the back-guard to the ladder rail.
Maximum distance between the back-guards on the ladder = 1400 mm.

B) Assembly of the vertical rods

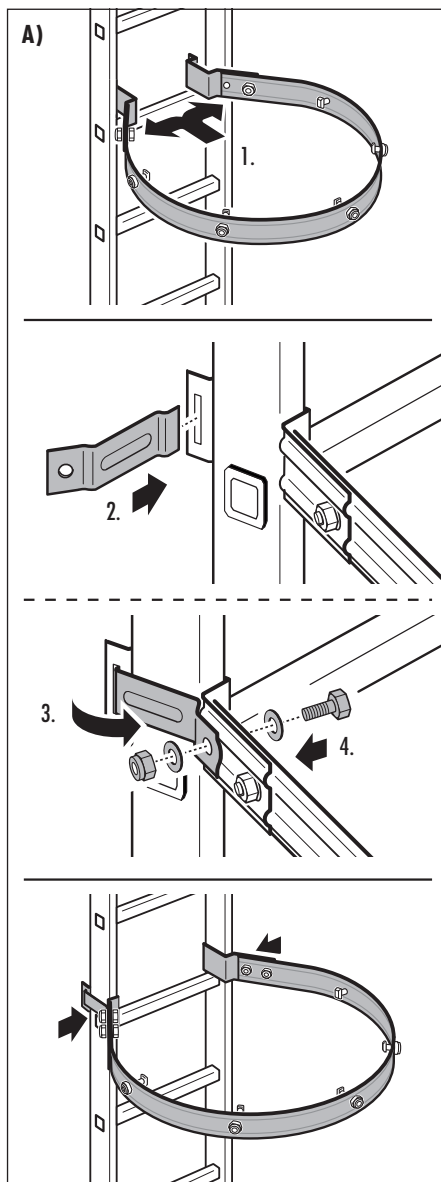
1. Connect the vertical rods with the back-guard hoop.
2. When screwing the elements together, the correct position (x) of the slot-mark on the hammer head screw must be considered!

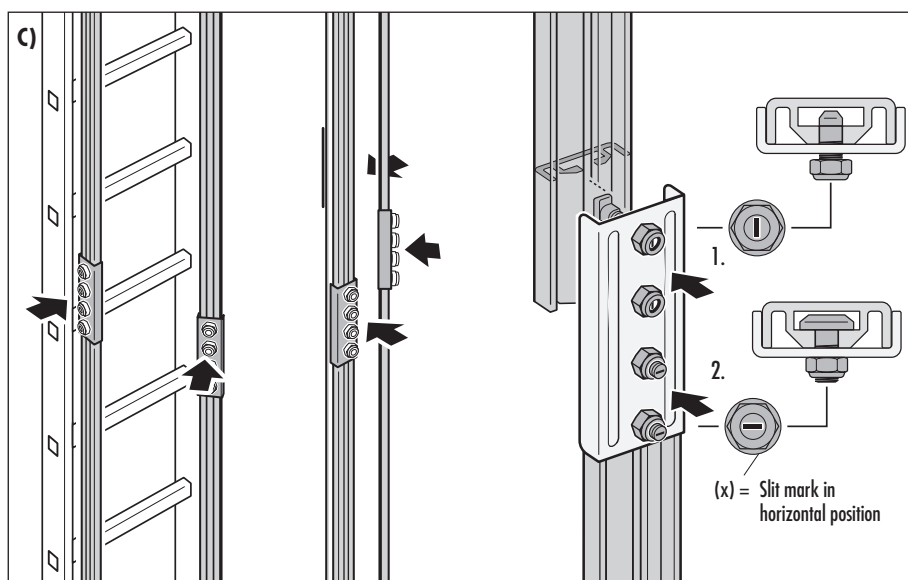
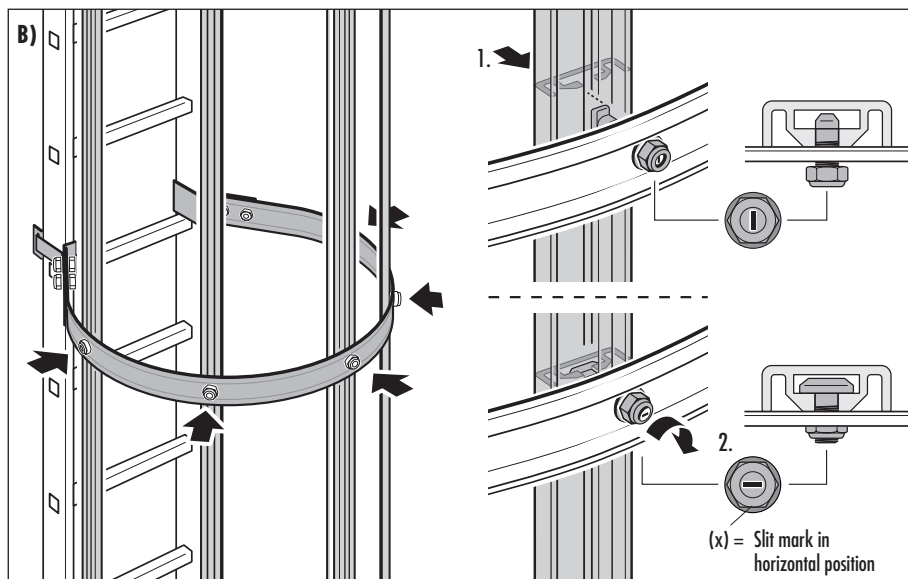
C) Assembly of the vertical rod connectors

1. Vertical rods are joined together with vertical rod connectors.
2. When screwing the elements together, the correct position (x) of the slit-mark on the hammer head screw must be considered!



During assembly, the hammer head screw must twist into the profile of the back-guard rod. Then a secure connection is guaranteed. Check the horizontal position of the slit mark on the hammer head screw (x)!





7. Mounting the Fixed Ladder

7.4 Installation Examples: Back Protection - System Components

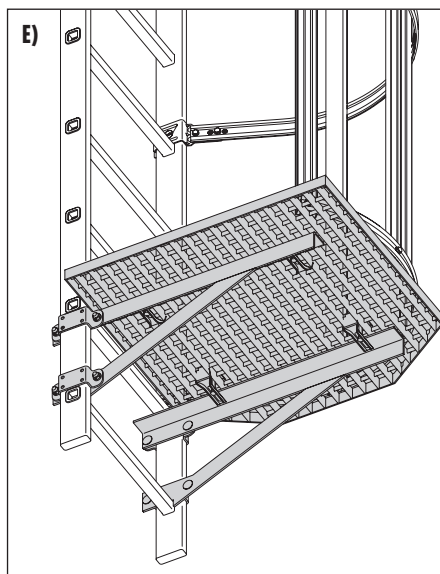
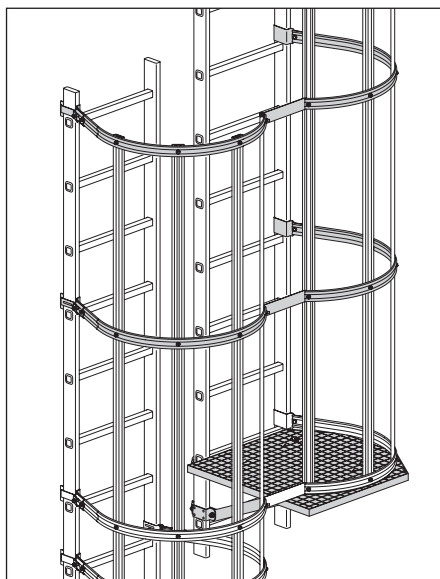
**Assembly of entrance and exit components;
installation of crossing elements for multiple
ladders**

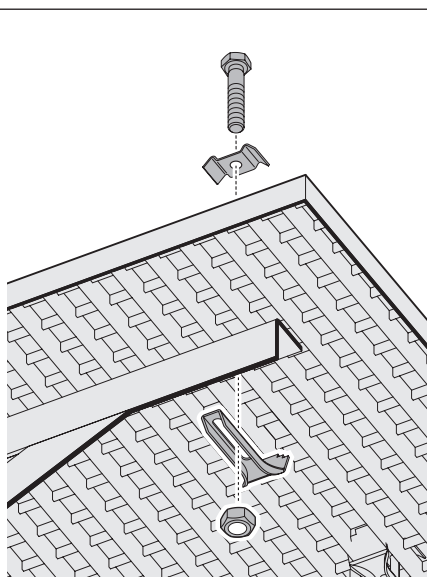
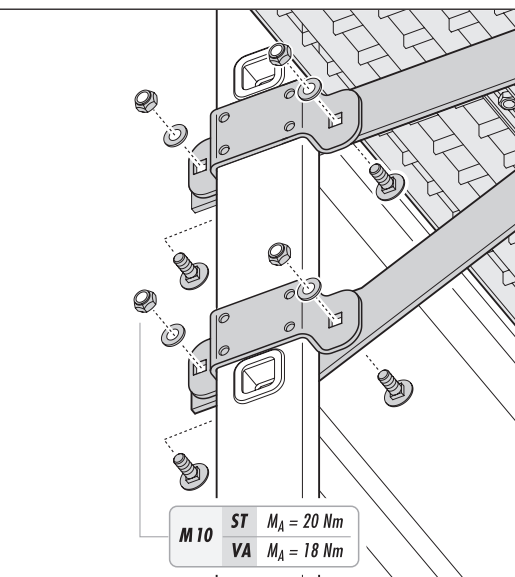
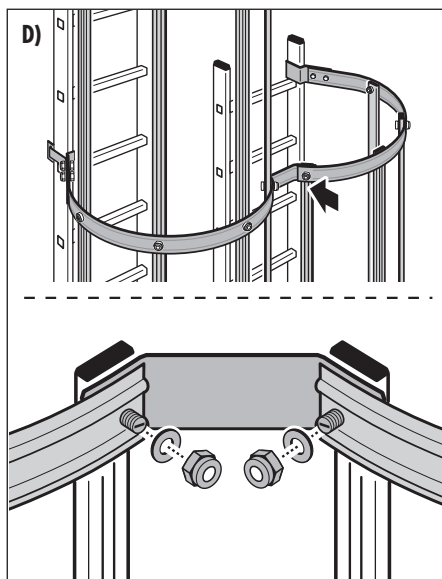
D) Crossing elements

Fixing the two $\frac{3}{4}$ back-guard hoops to the crossing element.

E) Assembly of the crossing platform

1. Mount the holding brackets on both ladder rails.
2. Mount the crossing platform on the holding brackets.





7. Mounting the Fixed Ladder

7.4 Installation Examples: Back Protection - System Components

Assembly of entrance and exit components; installation of crossing elements for multiple ladders

F) Entrance-/Exit:

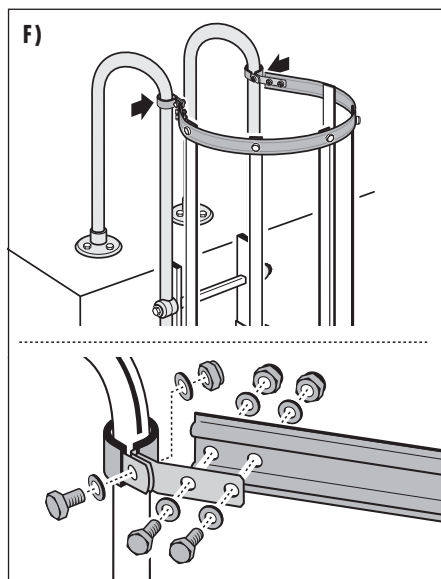
First of all mount the exit rail bracket (see 7.3 / entrance / exit components), then mount the back-guard hoops to the exit rail bracket.

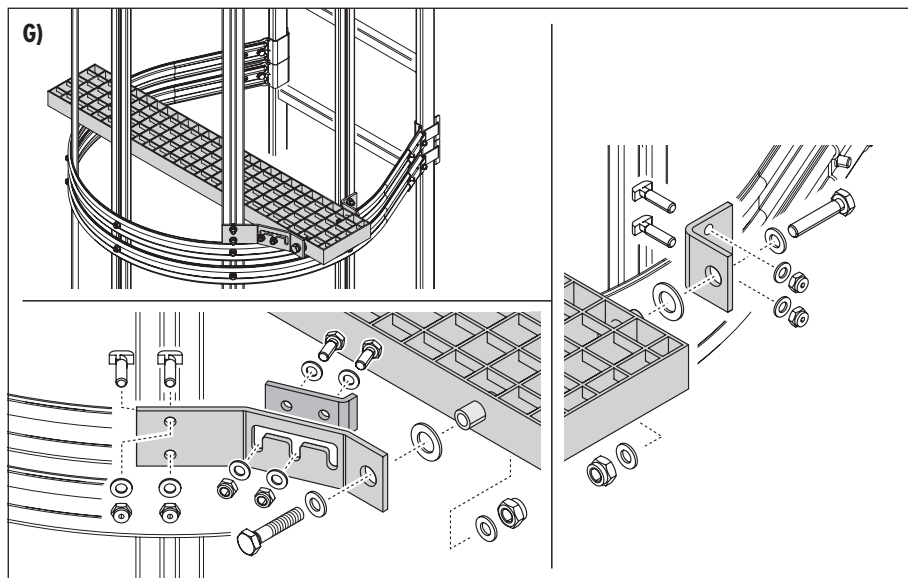
G) Foldable rest seat

Follow the installation instructions on page 28 (back-guard hoops, and vertical rods).

1. First of all, mount the back-guard hoop to the ladder rail.
2. Mount the rest seat on the vertical rods.

The rest seat must lay firmly against the back-guard hoop when in resting position (grid is folded down).





7. Mounting the Fixed Ladder

7.5 Installation Example: Basic and Expansion Platform

Basic and expansion platforms

Material: stainless steel or galvanized steel

The Hailo platforms are suitable for accessing emergency exits and escape ladders, as well as working or rest platforms.

The substructure is made of solid sectional steel with slanted supports and stable grating, the safety railing has a circumferential knee and foot railing.

The basic platform can be extended by any number of extension platforms.

Basic platforms

Dimensions (width x depth):

1000 x 1000 mm	1000 x 800 mm,
800 x 1000 mm	800 x 800 mm

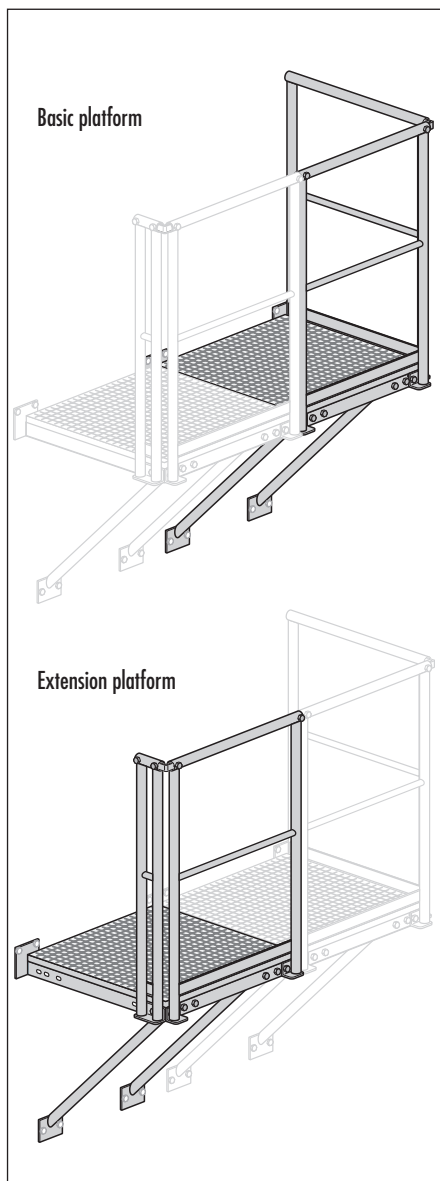
Extension platforms

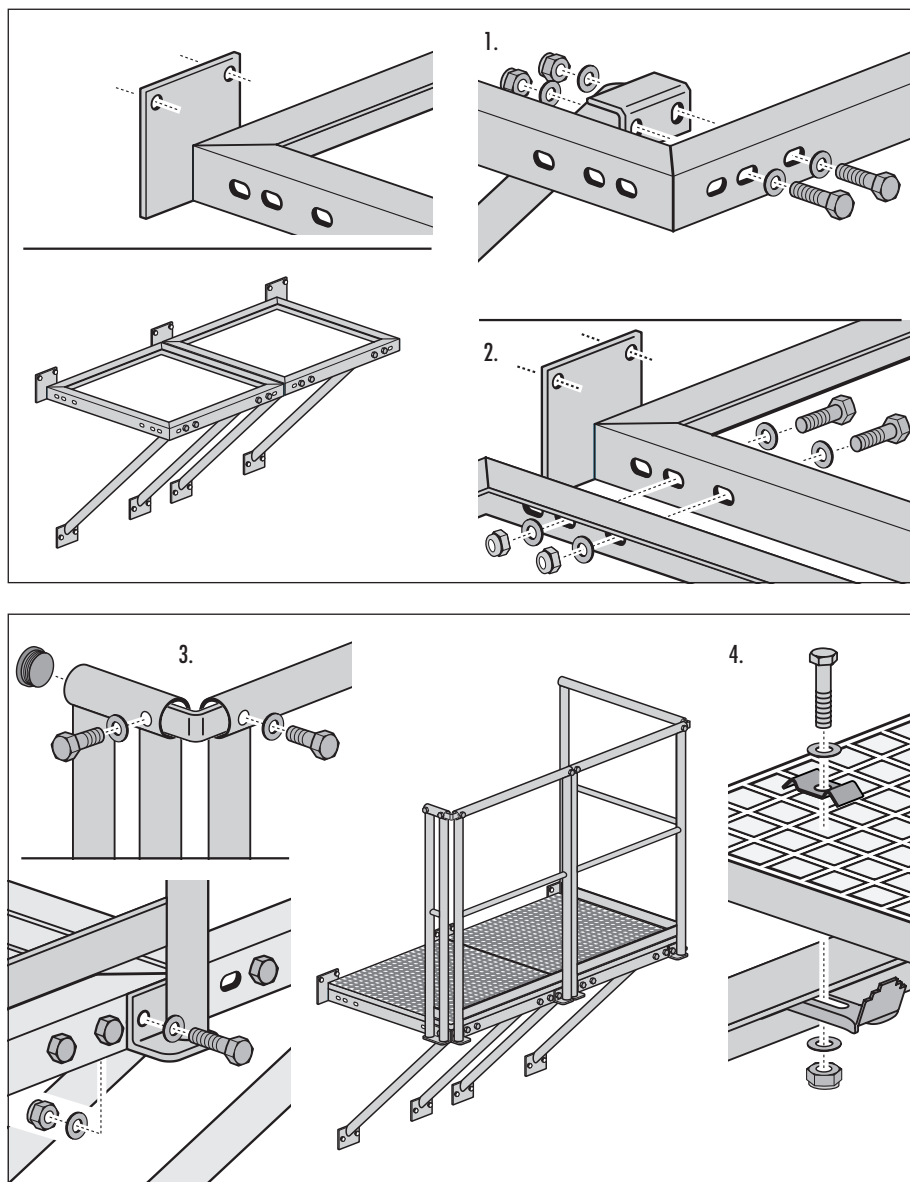
Dimensions (width x depth):

1000 x 1000 mm	1000 x 800 mm,
800 x 1000 mm	800 x 800 mm
600 x 1000 mm	600 x 800 mm

Assembly of the basic and expansion platforms:

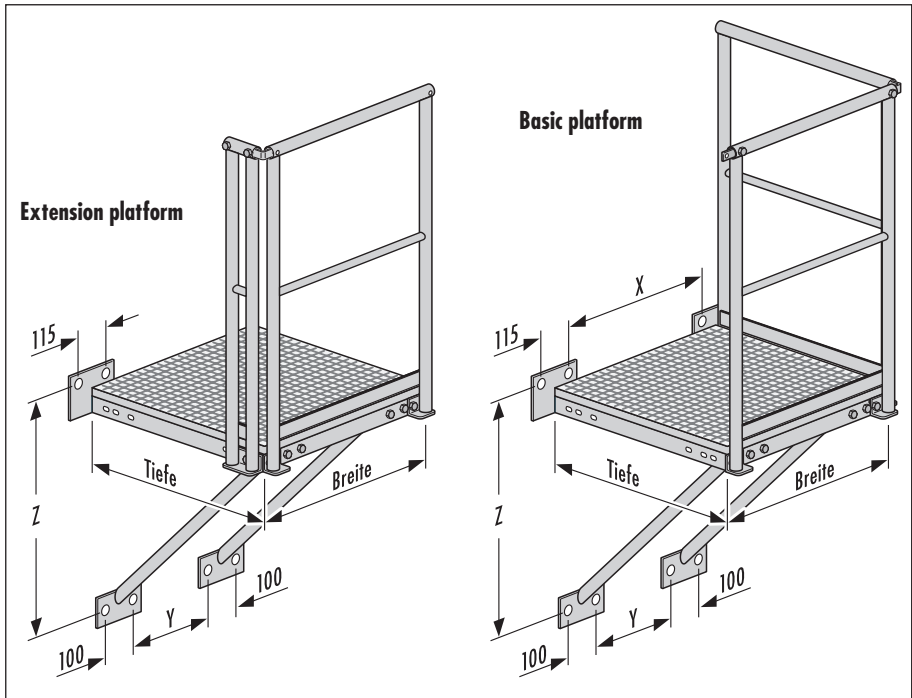
1. Attach the support to the substructure.
2. Screw the base platform together with the extension platform
3. Mount the safety railing to the substructure and screw them together.
4. Screw the grating to the substructure with clamping elements.





7. Mounting the Fixed Ladder
7.5 Installation Example: Basic and Expansion Platform

Base and extension platform with 45° support

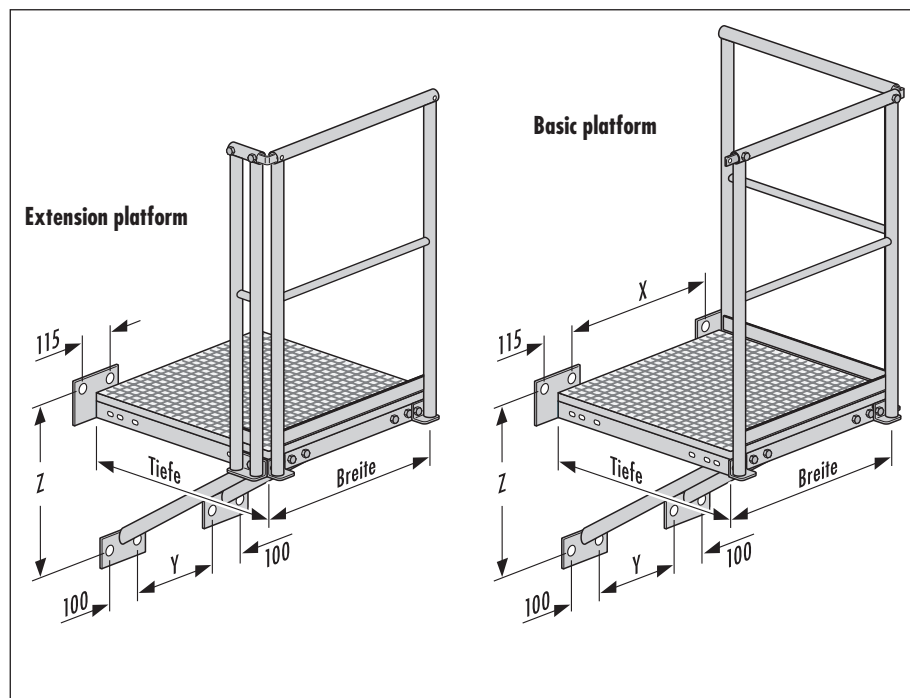


Width	Y
1000 mm	610 mm
800 mm	410 mm
600 mm	210 mm
Depth	Z
1000 mm	1060 mm
800 mm	860 mm

Width	X	Y
1000 mm	885 mm	610 mm
800 mm	685 mm	410 mm
Depth	Z	
1000 mm	1060 mm	
800 mm	860 mm	

Basically, for each stage a joint is to be chosen, that can withstand a force of $F_n \geq 3 \text{ kN}$ - extraction force and/or shear force - in the static position.

Base and extension platform with 30° support



Width	Y
1000 mm	610 mm
800 mm	410 mm
600 mm	210 mm
Depth	Z
1000 mm	720 mm
800 mm	520 mm

Width	X	Y
1000 mm	885 mm	610 mm
800 mm	685 mm	410 mm
Depth	Z	
1000 mm	1060 mm	
800 mm	860 mm	

7. Mounting the Fixed Ladder

7.6 Installation Example: Other System Components

A) Height-adjustable ground attachment

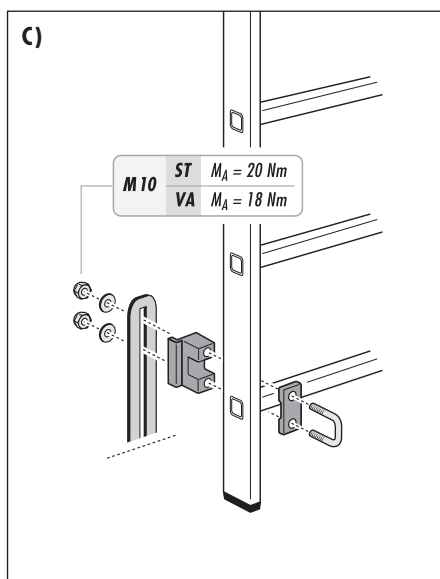
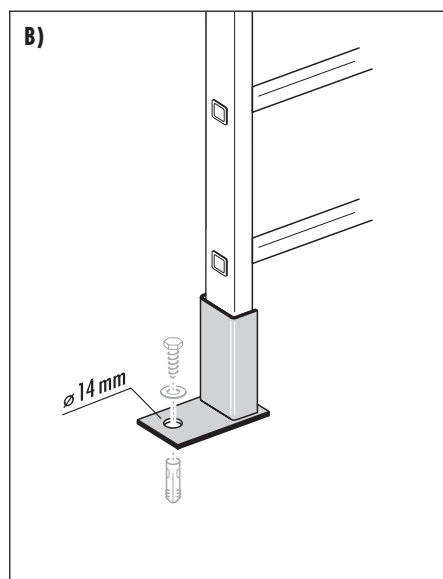
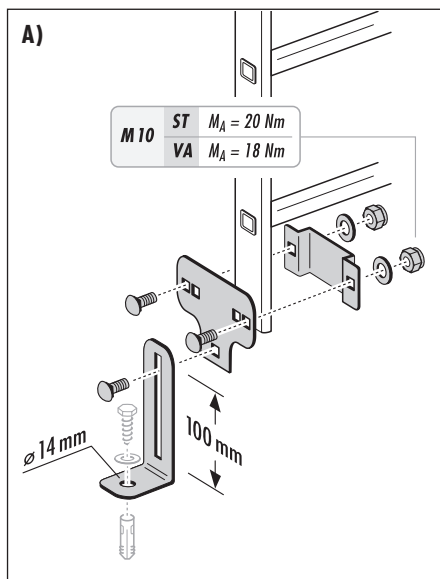
Material: stainless steel or galvanized steel
for ladder rails 40 x 20 mm and 72 x 25 mm

B) Ground attachment

Material: stainless steel or galvanized steel
for ladder rails 40 x 20 mm and 72 x 25 mm

C) Ground attachment on the ladder rung

Material: stainless steel or galvanized steel
for use with ladder guided service lifts



According to DIN 18799-1 for system heights ≥ 10 m a foldable rest platform must be installed at a height of max. 10m above the entrance level.
Every further 10 m a rest platform must be mounted to the ladder.

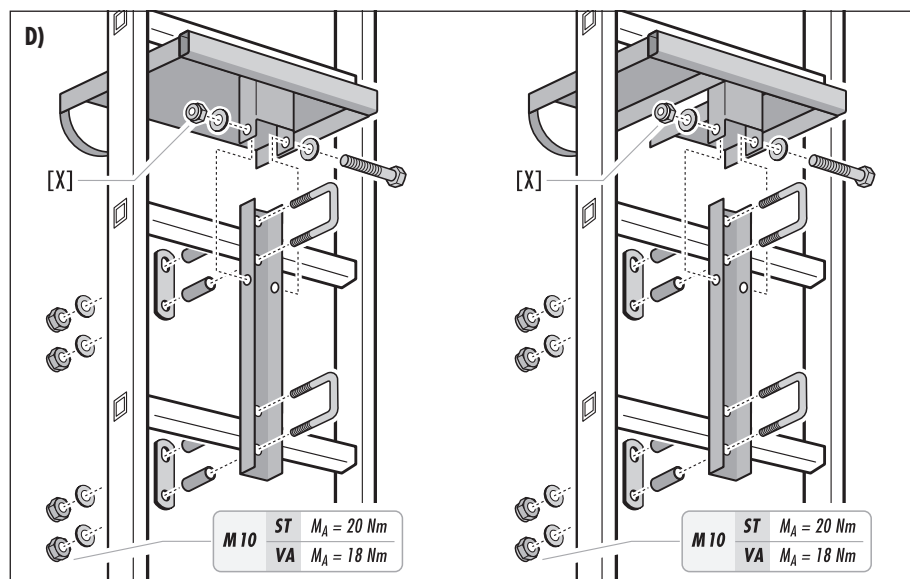
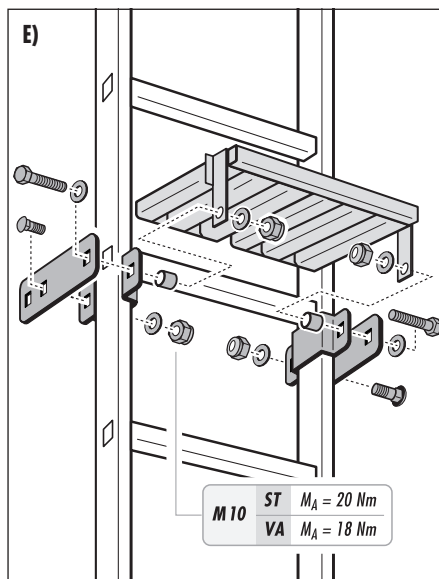
For wind energy plants a max. distance of ≤ 9 m between two rest platforms is allowed according to DIN 50308.

According to EN 14122-4 a max. distance of ≤ 6 m between two rest platforms is allowed.

D) Installation of the foldable resting platform –singular and double standing area– on the ladder rung.
(Aluminium ladder, ladder inner measurement ≥ 370 mm)

E) Installation of foldable resting platform to the ladder rail.
(Steel ladder, ladder inner measurement ≥ 370 mm)

Note: tighten the hexagon nut [X] just enough so that the foldable resting platform can be moved smoothly.



8. Labels and Notes

Examples of markings on the fixed ladder:

Please take special note of all markings and stickers with safety notes and safety instructions.

A) Nameplate of the ladder

Year of manufacture, materials and dimensions, as well as instructions on the maximum load of the ladder.

B) Nameplate of the back protection system

Year of manufacture and material specification.

C) Identification plate of the ladder

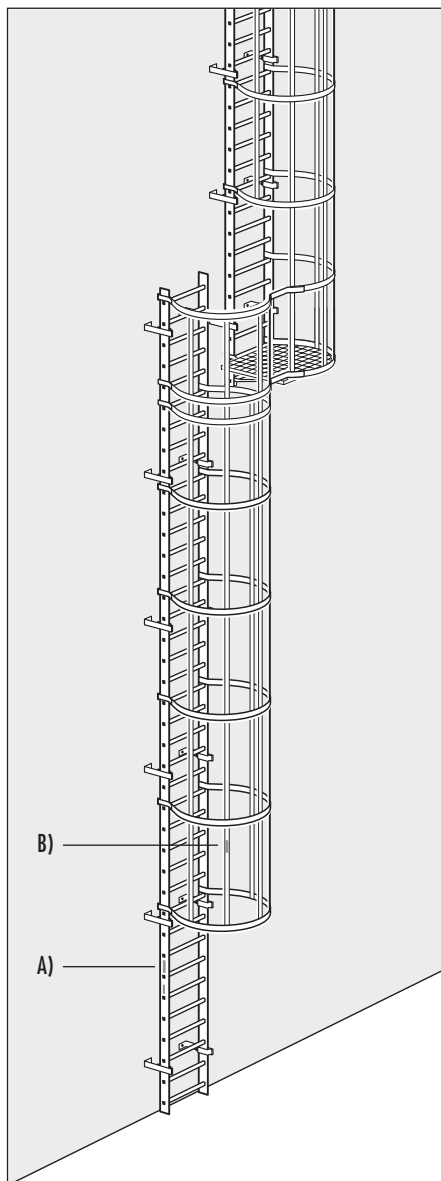
Example: information on the fall arrest system.

Examination of the ladder at least once annually by an expert, documented with an inspection plate.

Instructions on the maximum load of the ladder.



Also, customized safety and information labels may be used, which are not described or illustrated in this manual.



A)



ALU Steigleiter

ALU vertical ladder

Typ: ALO-72 MA
ALO-72 BA

Material: AlMg 1,5

Die Typenbezeichnungen sind aufgrund der Einsatzbereiche verschieden.

Bitte beachten Sie die Montageanleitung.

The type designations vary according to the areas of use.

Please comply with the operating instructions.

Holz-/Rail: 72 x 25 mm

Sprossen/Rungs: 30 x 30 mm

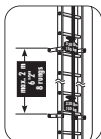
Leiternbreite/Ladder width: 450 – 490 mm

Zulässige Belastung: Gewicht = 150 kg

Permitted load: Weight = 330 lbs



CE 0121
DIN EN 353-1



CE EN ISO 14122-4
DIN 18799-1
DIN 14094-1

Gültig nur in Verbindung mit Hailo Aufbau- und Befestigungskomponenten.

Only valid in conjunction with Hailo mounting and fixing components.

Herstelljahr

Year of Construction:

2011

www.hailo.de

1174899-01/11 - Made in Germany

B)



Rückenschutz

Rear safety cage

Typ: RS-ALO

Material: AlMgSi 0,5



DIN 18799-1
DIN 14094-1
CE EN ISO 14122-4

Herstelljahr:

Year of Construction

2011

www.hailo.de

1174899-02/11

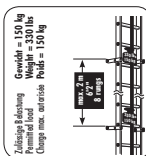
C)

Achtung/Attention!

Auflieg nur mit zum Führungsseil oder zur Führungsschiene zugelassenem Auffanggerät (Steigschutzbügel). Bitte nur Auffanggürtel nach EN 361 (Europe) oder OSHA/ANSI standards (North America) verwenden!

Accent only using a fall arrester (fall protection glider) suitable for the guiding cable or guide rail. Please use only safety harnesses acc. to EN 361 (Europe) or OSHA/ANSI standards (North America).

Ne monter sur l'échelle que si elle est munie d'un système antichute (glissière de protection) adapté au câble ou au rail de guidage. Veuillez utiliser exclusivement des harnais de sécurité aux normes EN 361 (Europe) ou OSHA/ANSI (Amérique du Nord).



Gewicht = 150 kg
Weight = 330 lbs
Masse = 150 kg



CE 0121
DIN EN 353-1

Leiter entspricht / ladder complies to: /
l'échelle satisfait aux normes:

OSHA 1926.1053

OSHA 1910.27

ANSI 14.3-2002 (Paris)



CE EN ISO 14122-4
DIN 18799-1

Zugang nur für Steigschutz unterwiesene Personen. / Access only permitted for persons trained in fall protection. / Accès réservé aux personnes au courant du système antichute.

Montiert / Assembled / Monté

Nächste Prüfung / Next inspection / Prochaine inspection



102579-01/11

9. *Inspection of the Fixed Ladder*

- The ladder system must be checked at least once a year for good condition and functioning by an expert / authorized person.

An expert / authorized person is:

A person who has the necessary expertise to test the equipment owing to their apprenticeship, professional experience, their recent professional activity and who has undergone special training with the manufacturer.

- Additionally, the equipment must be checked regularly under consideration of the existing environmental conditions. This can result in shorter test intervals.
- If there is an accident, the ladder system is to be checked immediately by an expert / authorized person.
- The operator is responsible for the punctual fulfilment of the inspection and maintenance schedule.
- For warranty claims, proof of regular testing is required.



The individual national operating and auditing regulations are to be followed.



The equipment must be checked regularly.
The safety of the user depends on the effectiveness and durability of the equipment.

10. Maintenance and Care

Cleaning:

- All static components are maintenance-free
- Moving parts are to be oiled when necessary and occasionally the free movement of these parts should be checked.
- Damaged surfaces should be sealed with a suitable corrosion protection agent.
- Impurities must be cleaned with a gentle cleaning agent.
Acids or alkaline based solutions must not be used.



If the equipment is resold to another country, it is essential for the safety of the end-user that this manual is received in the local language.

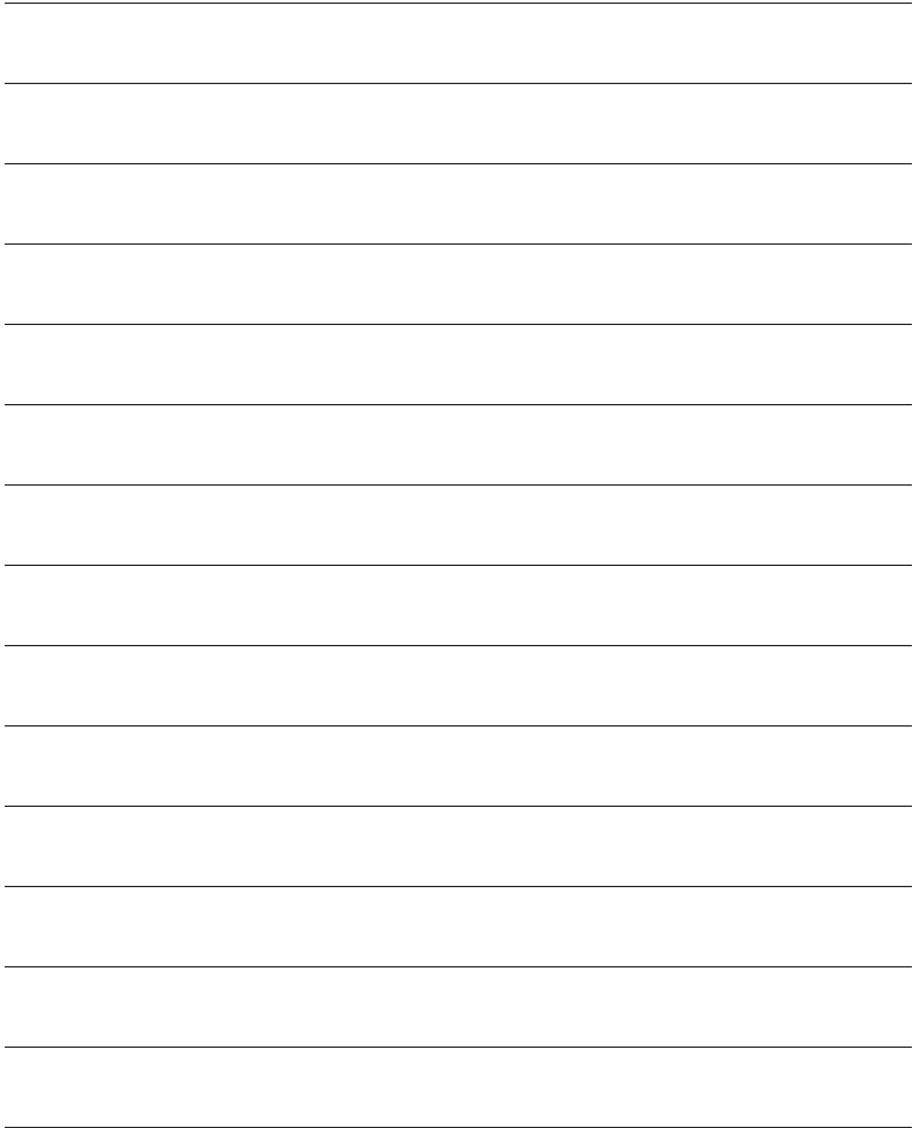
This manual is also available in the language of the destination country.

For more information, please contact
info @ hailo-professional.de

or contact:

Hailo-Werk
Rudolf Loh GmbH & Co. KG
Daimlerstraße 8
35708 Haiger, Germany

[illegible]

A series of horizontal lines for handwriting practice. The first line is a solid dark grey bar. Below it are 18 horizontal lines, each consisting of a thin dark grey top line and a thin dark grey bottom line, with a light grey background in between.



Hailo

IMPORTANT TELEPHONE NUMBERS:

We recommend each user to store the following telephone numbers in their mobile phone.

Emergency:

.....

Fire department:

.....

Operator of the system:

.....

Hailo service number:

.....

Other important telephone numbers:

.....

.....

.....

1193989 1011 • Technical changes reserved

Hailo-Werk • Rudolf Loh GmbH & Co. KG • Daimlerstraße 2 • 35708 Haiger, Germany

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